



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,790	02/23/2004	Kazuhide Tanaka	A8319.0035/P035	5538
24998 7590 08/04/2008 DICKSTEIN SHAPIRO LLP 1825 EYE STREET NW Washington, DC 20006-5403				
EXAMINER				
WARTALOWICZ, PAUL A				
ART UNIT		PAPER NUMBER		
1793				
MAIL DATE		DELIVERY MODE		
08/04/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/782,790

**Applicant(s)**

TANAKA ET AL.

**Examiner**

PAUL A. WARTALOWICZ

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 8 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5 and 8 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/CDC)  
Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 4/10/08 have been fully considered but they are not persuasive.

Applicant argues that the Office Action admits that Tosmic and Theime do not teach "one or more holes" and that without this limitation, the anticipation rejection over these references cannot be maintained.

However, the alleged admissions pointed to by applicant are meant to be an alternative ground of rejection to the anticipation rejections presented earlier under the Office Action in the 35 USC 102 section. It does not appear that applicant has addressed the anticipation rejection set forth in the previous Office Action. Therefore, the 35 USC 102 rejections are maintained.

Additionally, it does not appear that the limitation of a "hole" adds a patentable distinction to the claimed invention, longitudinal or otherwise. The base metal can be another that rests on top of the initial coating. There does not appear to be a structural difference between the claimed invention and the prior art of record. Therefore, it appears that the teaching of both Tosmic and Theime meet the limitation of assembling into a base metal along a longitudinal direction.

Applicant argues that there is no teaching in Meyer or Yamada of single-core or multi-core wire members that are sheaved, coated with metal, and assembled into the longitudinal holes of the base material.

However, it does not appear that single-core or multi-core wire members being sheaved add any patentable distinction to the instant product claims. It appears that the claim indicates that the invention is a magnesium diboride compound sheath superconducting wire, wherein the single or multi-core wire is coated by a metal. It does not appear from the instant claims that the wire must be sheaved **and** coated.

Applicant argues that the holes are formed in the base metal member using either a gun drill method or a metallurgic technique.

It appears that the instantly claimed product by process is the same as that which is claimed (longitudinal holes). When the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct and not the examiner to show the same process as making. *In re Brown*, 173 USPQ 685 and *In re Fessman*, 180 USPQ 324.

Applicant argues that neither Yamada nor Meyer teach or suggest single-core or multi-core members assembled into "one or more longitudinal holes."

However, it is unclear how qualifying the holes as longitudinal adds a patentable distinction with respect to the prior art. Longitudinal is a relative term and therefore it appears that the prior art of record meets this limitation.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Thieme et al. (U.S. 2003/0036482).

Thieme et al. teach magnesium boride superconducting wires (paragraph 0002) wherein the magnesium boride is surrounded by tantalum, niobium, nickel, nickel alloys, iron, or molybdenum. The taught wire further comprises a metal laminate on the outside of this barrier layer selected from the group consisting of copper, copper alloys, stainless steel, aluminum, aluminum alloys, and nickel alloys. See [0016] – [0018].

As to the limitation of "is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that

the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

As to the limitation of "one or more holes", it appears that the prior art meets this limitation as the base material (outer covering) has one or more holes with the superconductor and covering metal placed in the hole.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Tomsic (U.S. 2002/0198111).

Tomsic teaches superconducting wires (paragraph 0002) wherein magnesium diboride is surrounded by metal comprising silver, gold... See [0016], which is surrounded by a metal comprising gold, silver, platinum, palladium, rhodium, copper and aluminum. See [0017].

As to the limitation of "is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

As to the limitation of "one or more holes", it appears that the prior art meets this limitation as the base material (outer covering) has one or more holes with the superconductor and covering metal placed in the hole.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of any one of Yamada et al. (U.S. 5935911) or Meyer et al. (U.S. 5043320).

Thieme et al. teach magnesium boride superconducting wires (paragraph 0002) wherein the magnesium boride is surrounded by tantalum, niobium, nickel, nickel alloys, iron, or molybdenum, wherein the wire further comprises a metal laminate on the outside of this barrier layer selected from the group consisting of copper, copper alloys, stainless steel, aluminum, aluminum alloys, and nickel alloys (paragraphs 0016-0018).

Thieme et al. fail to teach that the base metal has one or more holes.

Yamada et al., however, teach a method for making a superconducting wire (col. 1) wherein a hole is formed in a portion of a molded body for the purpose of inserting core members in the hole (col. 3).

Meyer et al. teach a method for making superconducting wire (col. 1) wherein holes are formed in silver body for the purpose filling the holes with superconductor powder (col. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a hole is formed in a portion of a molded body in Theime et al. in order to insert core members in the hole (Yamada et al., col. 3) or in order to insert the holes with superconductor powder (Meyer, col. 3) as taught by Yamada et al. or Meyer et al.

As to the limitation of "is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomsic (U.S. 2002/0198111) in view of any one of Yamada et al. (U.S. 5935911) or Meyer et al. (U.S. 5043320).

Tomsic teaches superconducting wires [0002] wherein magnesium diboride is surrounded by metal comprising silver, gold... See [0016], which is surrounded by a



Art Unit: 1793

metal comprising gold, silver, platinum, palladium, rhodium, copper and aluminum. See [0017].

As to the limitation of "is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

As to the limitation of "one or more holes", it appears that the prior art meets this limitation as the base material (outer covering) has one or more holes with the superconductor and covering metal placed in the hole.

Tomsic fails to teach that the base metal has one or more holes.

Yamada et al., however, teach a method for making a superconducting wire (col. 1) wherein a hole is formed in a portion of a molded body for the purpose of inserting core members in the hole (col. 3).

Meyer et al. teach a method for making superconducting wire (col. 1) wherein holes are formed in silver body for the purpose filling the holes with superconductor powder (col. 3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a hole is formed in a portion of a molded body in Tomsic in order to insert core members in the hole (Yamada et al., col. 3) or in order to insert the holes with superconductor powder (Meyer, col. 3) as taught by Yamada et al. or Meyer et al.

As to the limitation of "is assembled into", it is unclear how this limitation lends a patentable distinction between the claimed invention and the prior art. It appears that the prior art meets this limitation as the superconductor and covering metal are abutting the base material (outer covering).

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thieme et al. (U.S. 2003/0036482) in view of any one of Yamada et al. (U.S. 5935911) or Meyer et al. (U.S. 5043320) and Liberman et al. (U.S. 2003/0135971).

Thieme et al. teach a compound sheath as described above in claim 1.

Thieme et al. fail to teach a plurality of the single-core or multi-core wires are assembled into the base metal and they are twisted.

Liberman et al., however, teach a magnesium diboride superconductor [0551] wherein a plurality of single-core wires are assembled into a base metal ([0326], fig. 60, 60A) that are twisted [0261].

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a plurality of single-core wires are assembled into a base metal ([0326], fig. 60, 60A) that are twisted [0261] in Thieme et al. in order to produce a known superconducting wire as taught by Liberman et al.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomsic (U.S. 2002/0198111) in view of any one of Yamada et al. (U.S. 5935911) or Meyer et al. (U.S. 5043320) and Liberman et al. (U.S. 2003/0135971).

Tomsic teach a compound sheath as described above in claim 1.

Tomsic fail to teach a plurality of the single-core or multi-core wires are assembled into the base metal and they are twisted.

Liberman et al., however, teach a magnesium diboride superconductor [0551] wherein a plurality of single-core wires are assembled into a base metal ([0326], fig. 60, 60A) that are twisted [0261].

Therefore, it would have been obvious to one of ordinary skill in the art at the time applicant's invention was made to provide a plurality of single-core wires are assembled into a base metal ([0326], fig. 60, 60A) that are twisted [0261] in Tomsic in order to produce a known superconducting wire as taught by Liberman et al.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1793

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL A. WARTALOWICZ whose telephone number is (571)272-5957. The examiner can normally be reached on 8:30-6 M-Th and 8:30-5 on Alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Wartalowicz

Art Unit: 1793

July 30, 2008

/Steven Bos/  
Primary Examiner  
A.U. 1793